CLAIMS

What is claimed is:

1. A method for processing an acoustic signal to separate the acoustic signal into a voiced (V) component corresponding to an electrolaryngeal source and an

5 unvoiced (U) component corresponding to a turbulence source, the method comprising the steps of:

digitizing the acoustic signal to produce an original stream of numerical values;

extracting a segment of consecutive values from the original stream of

10 numerical values to produce a first group of values covering two or more periods of the electrolaryngeal source;

performing a discrete Fourier transform on the first group of values to produce a discrete Fourier transform result;

extracting a second group of values from components of the discrete

15 Fourier transform result which correspond to an electrolaryngeal fixed repetition rate, F_0, and harmonics thereof;

inverse-Fourier transforming the second group of values, to produce a representation of a segment of the V component;

concatenating multiple V component segments to form a V component

20 sample stream; and

determining the U component by subtracting the V component sample stream from the original stream of numerical values.

2. A method as in Claim 1 comprising the additional steps of:

determining segments of the input acoustic signal that correspond to

25 inter-word segments.

3.   A method as in Claim 2 wherein the step of determining inter-word segments includes a step of determining total power in the segments and characterizing such segments with relatively low power as inter-word segments.

4.   A method as in Claim 2 additionaly comprising the steps of:

5   filtering the V component sample stream;

          for segments determined to be inter-word segments, setting the corresponding values of the V component sample stream to a zero value;

          adding the U component values to the altered V component sample stream values; and

10   producing a process acoustic sample stream from the addition of the U values and altered V values.

5.   A method as in Claim 1 wherein the steps are performed in a digital signal processor connected in line with a telephone apparatus.

6.   A method for processing an acoustic signal to separate the acoustic signal into

15   inter-word and non-inter-word segments, the method comprising the steps of:

          digitizing the acoustic signal to produce an original stream of numerical values;

          extracting a segment of consecutive values from the original stream of numerical values to produce a group of values;

20   determining an average power level for the group of values; and

          if the average power level of the group of values is below a threshold value, determining that the group of values corresponds to an inter-word segment of the acoustic signal.

7.   A method as in claim 6 additionally comprising the step of:

            if the average power level of the group of values is above a threshold value, determining that the group of values corresponds to a non-inter-word segment of the acoustic signal.

5   8.   A method as in claim 6 additionally comprising the step of:

            setting the group of values to a zero value if they correspond to an inter-word segment.